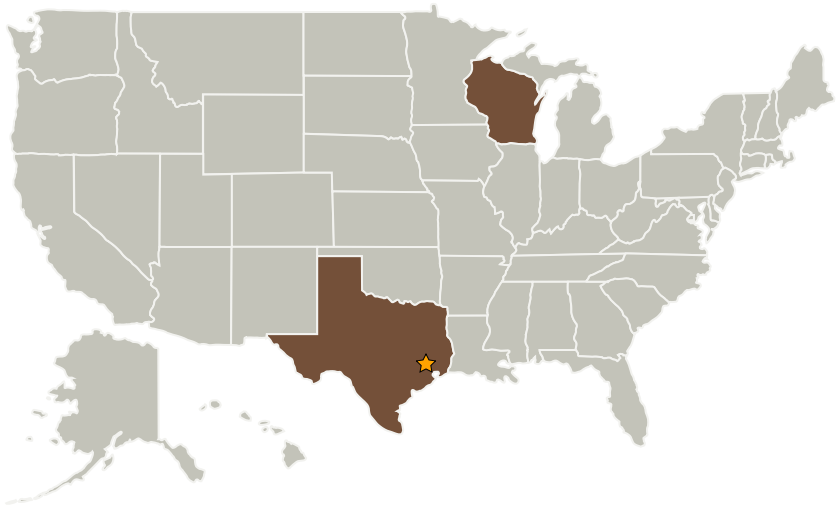
Enhanced Brine Dewatering System, Phase I

Completed Technology Project (2007 - 2007)

Project Introduction

The purpose of the Enhanced Brine Dewatering System (EBDS) is to provide an easily scalable means of completely recovering usable water from byproducts created by reverse osmosis water purification systems without the use of consumable wicks. Extended duration Lunar and Mars missions will require the conservation and recovery of water to allow for autonomous closed environments that in turn can dramatically reduce launch mass and reduce stowage volumes. The EBDS will build on previous developments in condensing heat exchangers to establish reliable, passive, and energy-efficient methods for recovering water by focusing on the phase separation methods employed at the brine evaporator. The EBDS uses evaporation surfaces treated with antifouling agents to eliminate biological growth and hydrophilic coatings to increase efficiency. These surface treatments are also employed at the condensing heat exchanger. In addition to limiting bio-fouling the brine evaporation system is designed to completely and autonomously recover usable water and isolate waste salts. Crew interaction is limited to periodically removing the bio-isolated waste byproducts from the system.

Primary U.S. Work Locations and Key Partners



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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Johnson Space Center (JSC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

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Organizations Performing Work	Role	Type	Location
★Johnson Space Center(JSC)	Lead Organization	NASA Center	Houston, Texas
Orbital Technologies Corporation	Supporting Organization	Industry Women-Owned Small Business (WOSB)	Madison, Wisconsin

Primary U.S. Work Locations	
Texas	Wisconsin

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Technology Areas

Primary:

- TX07 Exploration Destination Systems
  - TX07.2 Mission Infrastructure, Sustainability, and Supportability
    - TX07.2.1 Logistics Management